

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A loading and unloading stand of a palletless rack type storage system comprised of a plurality of racks having a loading fork and a stacker crane for loading cargo onto or unloading from the racks, and the stacker crane having a transfer fork arranged in a right angel to the loading fork, the transfer fork moving up or down in respect to to enter into, move up and down relative to and retreat from the loading fork while being alternately overlapped with the loading fork, the loading and unloading stand comprising:

~~plural~~ a plurality of fork bars arranged lengthwise with an interval to each other[[:]], the fork bars being fixedly mounted on longitudinal beams arranged across the fork bars, in which at least one free end of the fork bars takes a cantilever form;

~~longitudinal beam arranged in a right angle against the fork bars, and supporting below the fork bars, so that at least one free end of the fork bars takes a form of cantilever, and fixedly mounting each fork bar on the rack;~~

~~plural~~ a plurality of rollers being arranged in a proper interval in the fork bars and with the roller's rotation center being arranged placed along a width of the fork bars, the upper portion of the rollers having an excessive protrusion above the top of the fork bars so as to allow ~~wheels~~ bottom of the cargo to be rolling-contacted; and

a drive unit to keep the rollers rolling in the loading or unloading direction of the cargo, in which wherein the loading[[:]] and unloading stand is ~~providing~~ provided at a rim near the

edge of ~~the~~ an entrance of ~~an~~ a predetermined floor of the racks and being ~~[[a]]~~ the same level as ~~the loading and unloading~~ a conveyor to load the cargo into the racks from a loading station, or unload cargo to an unloading station from the racks.

2. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, wherein~~[[:]]~~ the fork bars ~~has~~ have approximate “U” shape body~~[[,]]~~ and ~~plural~~ a plurality of support plates placed between ~~each~~ longitudinal walls of the body for rotationally supporting the rollers.

3. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 2, wherein~~[[:]]~~ ~~plural foreign substance outlets are~~ the fork bars are provided with a plurality of foreign substance outlets formed at the ~~floor~~ bottom of the ~~fork bar~~ “U” shape body.

4. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim ~~[[2]]~~ 3, wherein~~[[:]]~~ the fork bars are further provided with a cover ~~is further provided on~~ at the top portion of the fork bars so as to prevent the entry of the foreign substance.

5. (Cancelled)

6. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim ~~[[1]]~~ 2, wherein~~[[:]]~~ ~~an upper portion of a support hole formed at the support plates is left open, and the support hole supports~~ formed with a support hole for supporting a shaft of the rollers~~[[.]]~~, and preferably the top portion of the support plates is left open so as to receive the shaft of the rollers.

7. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the fork bars ~~is comprised of~~ have two parallel longitudinal walls and ~~plural~~ a plurality of support plates placed ~~at a right angle~~ between ~~each~~ the longitudinal walls for rotationally supporting the rollers.

8. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the fork bars ~~is~~ have a rectangular shape body and a plurality of support plates ~~is~~ uprightly placed on the top ~~plate~~ of the body for supporting the roller.

9. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the fork bars ~~is comprised of~~ have a rectangular shape body having a ~~body opening~~ slot formed at the top ~~plate~~ of the body, and a container-shape roller housing for accommodating the roller.

10. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 1, wherein[[:]] the longitudinal beams ~~is comprised of~~ have a first longitudinal beam for supporting one end of the fork bars and a second longitudinal beam for supporting middle portion of the fork bars, ~~in which~~ whereby the transfer fork approaches ~~toward~~ only one lateral side of the ~~stand~~ fork bars.

11. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim [[10]] 1, wherein[[:]] the ~~multiple~~ rollers are arranged at ~~each fork bar at a regular interval from roller~~ in a row, ~~and~~ such that the rollers are placed horizontally at regular intervals and neighboring shafts of ~~each~~ the respective rollers ~~is~~ are drivingly coupled.

12. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claims 1 or 11, wherein~~[[:]]~~ ~~a part of the drivingly coupled rollers is~~ are arranged along ~~[[a]] the direction of loading/unloading direction~~ of cargo ~~in at a certain desired intervals~~, and ~~is are~~ connected to the drive unit ~~so it can rotate the roller, and the connected rollers act as driving rollers.~~

13. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, wherein~~[[:]]~~ ~~each~~ the longitudinal beams support ~~each end of the fork bars~~~~[[,]]~~ where such that the respective supporting points ~~is have~~ a distance from ~~each the~~ end of the fork bars toward the middle of the fork bars, and ~~the respective both~~ ends of ~~each the~~ longitudinal beams are connected with a post, whereby the transfer ~~beam~~ fork approaches both lateral sides of the ~~stand~~ fork bars, and wherein the rollers ~~is comprised of~~ include a first rollers and a second rollers bordered at a the center portion of the fork bars, and the first and second rollers being ~~drivingly~~ individually coupled to the drive unit~~[[,]]~~ ~~and the first roller is isolated from the second roller~~ so as to individually support ~~respective the~~ bottom of ~~each different~~ cargo.

14. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 13, wherein~~[[:]]~~ the first and second rollers ~~is are~~ comprised of roller row having multiple rollers arranged ~~at in~~ each fork bar at a regular intervals, neighboring shafts of ~~each the respective~~ rollers ~~is are~~ drivingly coupled.

15. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claims 1 or 11, wherein~~[[:]]~~ the drive unit is comprised of a drive pulley arranged ~~in a predetermined interval~~ below the fork bars having the roller row, a driven pulley provided at ~~[[a]]~~ one shaft of the roller row, a first drive belt ~~coupling~~ coupled with ~~neighboring~~ the drive pulley, a second drive belt ~~connecting~~ connected with the corresponding drive pulley and driven pulley, and a motor for giving rotation to ~~one of any~~ the drive ~~pulleys~~ pulley.

16. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, wherein~~[[:]]~~ the fork bars are provided with a projection tab ~~is~~ provided at the lower middle portion of the fork bars with a ~~proper~~ predetermined height, and ~~is~~ are connected with ~~each~~ the longitudinal beams through the projection tab.

17. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 1, ~~wherein: the stand is further comprised of~~ comprising: a stopper ~~that is comprised to stop~~ for placing the cargo ~~running on~~ rolling into the fork bars at a predetermined position.

18. (Currently Amended) The loading~~[[/]]~~ and unloading stand of a palletless rack type storage system according to claim 17, wherein~~[[:]]~~ the stopper ~~is~~ includes a limit switch that is attached on a supporter between the cargo and ~~the~~ a post, ~~[[and]]~~ the supporter being ~~uprighted~~ upright from the longitudinal beams, by which the motor stops when the cargo ~~has~~ is in contact with the limit switch.

19. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim 17, wherein[:]] the stopper ~~is~~ includes a distance sensor that is attached on a post, by which the motor stops when the a desired distance of the approaching cargo is detected ~~to the drive unit~~.

20. (Currently Amended) The loading[[/]] and unloading stand of a palletless rack type storage system according to claim [[17]] 1, ~~wherein: the stand is further comprised of~~ comprising: a weight sensor for measuring deflection of the longitudinal beams caused by the weight of cargo, that is the weight sensor being installed at a lower portion of the longitudinal beams, ~~by which the deflection of the longitudinal beams caused by the overweight weight of cargo is measured,~~ and generating a denial signal for overweight cargo ~~is generated~~.